We claim:

1. A method of producing at least one sexed embryo comprising:

producing a stream containing sperm cells, wherein the stream comprises sperm cells from a cell source surrounded by sheath fluid, wherein the sheath fluid surrounding the sperm cells includes an amount of citrate;

identifying X-chromosome bearing sperm cells and/or Y-chromosome bearing sperm cells in the stream;

collecting X-chromosome bearing sperm cells and/or Y-chromosome bearing sperm cells in at least one collector having a collector fluid; and

fertilizing at least one egg with the collected sperm to form at least one sexed embryo.

2. The method of claim 1, wherein the at least one egg is fertilized in vitro with the collected sperm.

3. The method of claim 1, wherein the citrate comprises a chemical in the citric acid cycle.

4. The method of claim 1, wherein the at least one egg is fertilized in vivo.

5. The method of claim 4, wherein the step of fertilizing in vivo further comprises the step of delivering sperm cells into both uterine horns of a uterus.

6. The method of claim 5, the step of delivering sperm cells into both uterine horns further comprises inserting said sperm cells approximately between 12 to 24 hours inclusive after detecting estrus.

7. The method of claim 1, wherein the steps of producing a stream containing sperm, identifying X-chromosome bearing sperm cells and/or Y-chromosome bearing sperm cells in the stream, and collecting X-chromosome bearing sperm cells and/or Y-chromosome bearing sperm cells in at least one collector having a collector fluid further comprises:

supplying sperm cells to a nozzle from the cell source;

creating a sheath fluid environment in the nozzle in which sperm cells are surrounded by the sheath fluid, wherein the sheath fluid environment comprises a citrate;

producing a stream containing the sperm cells surrounded by the sheath fluid;

sensing a property of the sperm cells in the stream, wherein said property corresponds to the presence of an X-chromosome or a Y-chromosome;

identifying X-chromosome bearing sperm cells and/or Y-chromosome bearing sperm cells in the stream; and

collecting X-chromosome bearing sperm cells and/or Y-chromosome bearing sperm cells in at least one collector having a collector fluid.

8. The method of claim 7, wherein the sperm cells are present in a pre-sort environment prior to being supplied to the nozzle and wherein the sperm cells are present in a post-sort environment at collection.

9. The method of claim 8, wherein the pre-sort and/or the post-sort environments are coordinated with the sheath fluid environment.

10. The method of claim 9, wherein the pre-sort and/or post-sort environments comprise the same concentration of citrate as the sheath fluid environment.

11. A method of producing at least one sexed embryo comprising:

producing a stream containing sperm cells, wherein the stream comprises sperm cells from a cell source surrounded by sheath fluid, wherein the sheath fluid surrounding the sperm cells includes a citric acid;

identifying X-chromosome bearing sperm cells and/or Y-chromosome bearing sperm cells in the stream;

collecting X-chromosome bearing sperm cells and/or Y-chromosome bearing sperm cells in at least one collector having a collector fluid which includes a citric acid; and

fertilizing at least one egg with the collected sperm cells to form at least one sexed embryo.

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